



(*Veterinary Series, No. 14.*)

THE  
AGRICULTURAL LEDGER.

1895—No. 19.

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OXEN.

*DICTIONARY OF ECONOMIC PRODUCTS, Vol. V., O. 551-594.]*

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BREEDS OF CATTLE IN THE MATHURA DISTRICT:

*A Note by SYED MOHAMMAD HADI, M.R.A.C., Assistant Director of Land Records  
and Agriculture, N.-W. P. and Oudh.*

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*Other PAPERS that may be consulted :*

The Agricultural Ledgers, Nos. 19 of 1893; 14 of 1894; 7 of 1895;  
10 of 1895; 12 of 1895.



CALCUTTA :  
OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, INDIA,  
1895.

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E. C. BUCK,

*Secretary to the Government of India.*

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[Dictionary of Economic Products, Vol. V., O. 551—594.]

BREEDS OF CATTLE IN THE MATHURA DISTRICT:

A Note by SYED MOHAMMAD HADI, M.R.A.C., Assistant Director of Land Records and Agriculture, N.-W. P. and Oudh.

The District of Mathura enjoys a special reputation in the North-Western Provinces for its cattle. The cows of Kosi and Chhata are celebrated for their milking qualities, and the bullocks are believed to be very good both for the plough and for the cart.

I had the pleasure of making a tour in the greater part of the district during the past cold weather, and of enquiring into the subject of cattle breeding generally.

The following note is based upon the information I collected during the tour :—

*Breeds of Cattle.*

There are two distinct breeds in this District, one of which belongs to the District proper, and the other, which is a superior breed, is a cross between the indigenous and certain other breeds, the chief of which is the *Mewat*. *Mewat* is a vague term applied by the natives to the tract of land inhabited by the caste of Muhammadan converts called '*Mewatis*.' It begins from the village Kamar in the Kosi Tahsil, and includes part of the Gurgaon District in the Punjab, and part of the Ulwar and Bharatpur States in Rajputana.

Both of these breeds go by the name of *Desi*, which means the country breed; but, for the sake of convenience, the former or the indigenous breed, will be described as the *Desi* (country breed), and the latter or the mixed breed, as the *Kosi* breed, because it is commonly found at and near the village of that name, and because in all probability it seems also to have originated near it. Besides the *Kosi* and the *Desi*, a few *Hariana* and *Mewat* cattle are also seen with Zamindars and cattle dealers.

*Origin of the Kosi Breed.*

It is difficult to trace the exact history of this breed, for there is no proper system of breeding among the people. Any bull that can satisfy the cow, when she is in heat, and that can be had with the least possible trouble on the part of her owner, is put to her with little or no consideration of the breed he belongs to, his age, size, shape, strength, etc., or of future ill consequences arising from such a practice, which leads to a

Special  
reputation  
of Mathura  
cattle.

Mewat  
Breed.

Kosi Breed.

OXEN.	Breeds of Cattle in the Mathura District.
Kosi Breed.	gradual degeneration of the animals. But, so far as the enquiries reveal and the characters of the animals go, it is evident that there is more of <i>Mewat</i> blood in them than that of any other breed.
Cows.	<p>The following are the main distinctive features of the <i>Desi</i> and the <i>Kosi</i> breeds :—</p> <p>(a) <i>Cows</i>.—The dewlap of the better bred (<i>Kosi</i>) cow is heavier at its origin than that of the <i>Desi</i>.</p> <p>When taken in profile, it will be noticed that the forehead is more prominent. The <i>Kosi</i> animal has a peculiar eye, <i>badami</i> (almond-shaped).</p> <p>The hair of the <i>Kosi</i> is fine, more glossy and polished, while that of the <i>Desi</i> is rough and coarse. The tail of the better bred cow is thick at the root, and tapers from end to end, while this does not obtain in the <i>Desi</i> animal.</p> <p>The <i>Desi</i> cow frequently has a "pot" belly, while in the <i>Kosi</i>, it is in proportion to the size of the animal. The horns too of the <i>Kosi</i> cow are always elegant in form, and in proportion to the size of the head, whereas the <i>Desi</i>, frequently, has the horns greatly developed and mis-shaped. The better bred cow has a larger udder, and the teats are further apart in the <i>Kosi</i> than in the <i>Desi</i> animal. The whole appearance of the <i>Kosi</i> denotes quality.</p>
Bullocks.	<p>(b) <i>Bullocks</i>.—The hoofs of the mixed breed bullock are more compact, the toes are not widely separated, and are very dark and round.</p> <p>Eyes are darker and more prominent, and have a game look in them. The forehead is also more prominent when seen in profile.</p> <p>In the better bred bullocks the superior muscles of the neck are well developed, giving greater width to the upper surface, and form a channel (<i>Nam</i>) when the neck is bent down.</p> <p>On the other hand, in the <i>Desi</i> bullock, the superior muscles of the neck are badly developed, making the superior portion of this region thin; and there is little, if any, channel. These animals are considered weak.</p> <p>The sheath in well-bred animals is occasionally slight, but in others it is well developed, which is looked upon as a bad point and a sign of coarse breeding. In the improved breed the chest is broad, the tail is thin, the hair is fine, and the whole appearance is proportioned and elegant.</p>
Colour.	<p>Grey is looked upon as the best colour for work as it is supposed to accompany strength.</p> <p>White animals are thought to be inferior to the grey. Dark-coloured and black are considered bad. If the animal is white it should be dark on the shoulders. A red brick colour is considered the sign of a slow-mover.</p> <p>The <i>Lakhi</i> (shellac-colour) is preferred to the red.</p>
Superiority of Mewat Cattle.	<p><i>Mewat Cattle.</i></p> <p>These are well-built animals possessing greater strength and power of endurance than the <i>Kosi</i> cattle. They possess all the good points of the latter and usually in a higher degree. They are brought in hundreds to Kosi for sale, and are thence exported to Calcutta and other places. As far as possible, people near Kosi purchase <i>Mewat</i> calves and let them loose after branding, to the memory of their ancestors. These calves in time become breeding bulls.</p> <p>The following measures of the cattle found in this district may be here given :—</p>

Measurements, etc., of the Cattle of the breeds found in the District of  
Matura, N.-W. P.

OXEN.		Breeds of Cattle																		
Measurements.	Sex.	A Measurements, etc., of the Cattle of the Breeds found																		
		Age.	Height at shoulder.		Height at croup.		Height at elbow.		Length.	Length of horn.		Length of ear.	Length of face.		Length of forehead.	Girth of chest.	Girth at abdomen.			
			Ft.	In.	Ft.	In.	Ft.	In.		In.	Ft.		In.	Ft.				In.		
	Bullock . .	5	4	3	4	1½	1	2	6	5	7½	0	10	1	8	7	5	5½	6	10
	Cow in calf .	12	3	8	3	8	1	1½	5	7	6	0	9	1	6	6	4	6	5	11
	Cow . .	9	4	1	4	0	1	2	5	9½	3½	0	10	1	8	7	4	11	6	3
	Breeding bull .	13	4	11	4	11	1	4	7	7	10	0	10	1	9½	11	6	6	7	5
	Bullock . .	5	4	4½	4	6½	1	4	6	7	3	0	11	1	6½	8½	5	8½	7	0
	Do. . .	3	4	10½	5	0	1	4	6	6	6	1	11	2	0	9	6	2	6	7
	Do. . .	5	4	11	4	9	1	4	6	6	9½	1	1	1	10½	8	6	2	7	2
	Do. . .	3½	4	4	4	4	1	4	5	10½	4	0	10	1	10	8	5	6	6	0
	Cow in calf .	6	4	2	4	7	1	3	7	0	6	1	0	1	9½	7	5	10	7	5
	Cow . .	7	3	4	4	5	1	4	6	1½	9	0	11	1	8½	6½	5	4	6	5
	Breeding bull .	7	4	4½	4	9½	1	3	7	0	5	1	0	1	10	8	6	7	7	2

in the Mathura District. (S. M. Hadi.)														OXEN.	
in the District of Mathura (N.-W. P.).														Measurements.	
Girth of forearm.	Girth of shank.	Length of neck.		Length of shank.		Colour of hair.	Girth at croup.		Girth of thigh.		Girth of arm.	Number of Plate.	Place where the animal was born.	Breed.	REMARKS.
In.	In.	Ft.	In.	Ft.	In.		Ft.	In.	Ft.	In.	Ft.	In.			
7	8½	1	7	1	7	Dark grey.	5	9	1	5	1	11	I Jait	Kosi	Calf of cow No. 11.
5½	6½	1	4½	1	3	Do.	4	11	1	11	0	10	II Do.	Desi	Dam of bull No. 1.
6½	7½	1	6½	1	5	Do.	5	2	1	3	0	11	III Chhata	Do.	
9	10	2	4	1	11	Grey	7	6	1	9	1	6½	IV Do.	Kosi.	
8	9½	1	8	1	9	Do.	6	1	1	8	1	3	V Do.	Do.	
8	10	1	8½	2	1½	Brick colour.	7	1	1	6	1	4½	VI Firozepur.	Me-wat.	
9½	10½	1	5	1	10	White	6	7½	1	7	1	5½	VII Do.	Cross between Me-wat and Kosi-Me-wat.	
7	8½	1	2	1	8½	Do.	5	4	1	4	1	2½	VIII Do.	Kosi-Me-wat.	
8	9	1	3½	1	8	Do.	6	7	1	6	1	2	XII Gurgaon	Do.	
7	8½	1	6½	1	9	Do.	6	1	1	4	1	1½	XI Kosi	Kosi.	
9	10	1	11	1	10	Grey	6	8	1	9½	1	4	XIII Hathia District, Mathura.	Do.	



OXEN.	Breeds of Cattle
Defective pasturage.	<p data-bbox="659 327 738 348"><i>Pastures.</i></p> <p data-bbox="401 356 978 678">Throughout the greater part of this District, the pastures are either not extensive enough to afford sufficient fodder for the support of cattle, or are such as produce only a rank and coarse herbage, very poor in nutritive qualities. The latter is the case chiefly in the Tahsil of Math; where although the area under permanent pastures is very large, yet it lies so low as to be frequently overflowed by the Jamna during the rainy season. This occurrence gives rise to a series of unfavourable circumstances, under which all superior grasses die out and only the rank ones survive. These again do not stand long; for the soil being sandy (<i>bhur</i>), gets dry very soon after the rainy season is over. Thus, the cattle in this Tahsil do not get enough to live upon during the hot months of summer; and during the rains, though there is enough for them to eat, the grasses are, as said before, poor in respect of nutritive qualities, and cannot supply the proper quantity of materials necessary for their proper development. Few large pastures are found in the Tahsils of Mathura, Mahaban and Sadabad; and the cattle, in these Tahsils, are therefore generally weak in constitution and almost always out of condition.</p> <p data-bbox="401 678 978 753">In the Tahsils of Chhata and Kosi there are large pasture areas, which produce better kinds of grasses throughout almost the whole year. Consequently the cattle here are naturally strong and well built, and such as satisfy all the requirements of the native agriculturist.</p>
Market.	<p data-bbox="620 764 762 786"><i>The Kosi Market.</i></p> <p data-bbox="401 797 978 968">There is one more feature at Kosi which has a good deal to do with the better quality of animals in its neighbourhood, which is an old cattle market, where cattle are brought in thousands for sale from the neighbouring cattle fields such as Hariana and Mewat, and are thence distributed in the interior of the District, and exported to Calcutta and other distant places. Many persons at Kosi and in its neighbourhood have taken to dealing in cattle as their sole livelihood. Some of them, therefore, take great interest in producing good animals both by good feeding and by selected breeding; but the number of such breeders is very limited.</p>
Cultivation of fodder crops.	<p data-bbox="632 979 750 1001"><i>Fodder Crops.</i></p> <p data-bbox="401 1009 978 1281">No fodder crops are raised by the people in general. Only certain well-to-do cultivators or zamindars, that have a personal liking for their cattle, grow <i>juar</i> for green fodder. The seed is sown very thick, and the crop is cut and consumed gradually, while green <i>guar</i> (<i>Cyamopsis psoraloides</i>), is sometimes cultivated in the Tahsil of Math to be given to milking animals as green fodder. At Kosi and in the surrounding villages <i>sarsón</i> (<i>Brassica campestris</i>) is sown alone or as a mixed crop with <i>rabi</i> cereals. It is cut green after the plants have borne pods, and given to animals mixed with chopped <i>juar</i> stalks, straw of cereals or other dry fodder. Also green weeds pulled out from <i>rabi</i> fields cut fine and mixed with chopped green <i>sarsón</i> stalks are given especially to milking cattle in the cold weather, when green food is scarce. Carrots and oats are also grown, but to a very limited extent. The cultivation of <i>sarsón</i>, <i>guar</i> and <i>juar</i> for green fodder should be extended as far as possible.</p>
Bulls.	<p data-bbox="632 1290 762 1311"><i>Breeding Bulls.</i></p> <p data-bbox="401 1311 978 1415">Breeding bulls are not specially reared by anybody. The bulls that do the work of breeding, are generally those that are let loose by Hindus, to the memory of their deceased ancestors. The number of such bulls in each village is two or three, and that number is considered enough to satisfy the breeding requirements of the village. As the quality of these</p>

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<p>bulls depends upon the means of the persons that originally purchase and let them loose, some of them belong to the superior <i>Mewat</i> or <i>Kosi</i>, and some to the inferior country breed; some are large and others small. Those belonging to the <i>Mewat</i> breed develop into strong, well-built animals, sufficiently suitable for breeding purposes. No discretion is used in making a selection, either of a cow or a bull; although the people are fully aware of the excellent results of the system of breeding by selection. Any animal, whether <i>Mewat</i> or <i>Desi</i>, and whether old or young, that happens to approach the cows when the latter are in heat, is allowed full liberty. This practice directly leads to degeneration of cattle in general.</p>	<p>Bulls.</p>
<p><i>Cows.</i></p> <p><i>Their milking qualities.</i>—Heifers as a rule come to maturity at the age of two-and-a-half to three years; but in the Tahsils of Math and Sadabad, there being a scarcity of natural fodder, they sometimes take as much as four years instead of three. Some cows calve annually (<i>barsawal</i> or <i>ek barsi</i>), some once in two years (<i>do barsi</i>), and very few, once every three years. They take the bull between two to four months or eight to ten months after calving, according as they calve once a year or once in two years. A young cow which does not show a desire for the bull, within four months of her first calving, is taken to be one which would not calve every year. Those calving annually, yield the normal quantity of milk for the first four months, and those calving once in two years, for eight months. After this period the yield begins to decrease day by day in quantity, but improves in quality, until at last the <i>ek barsi</i> goes dry in another four months, and the <i>do barsi</i>, in another four to six months. There are, however, a few cows which give milk for a longer period than this, going dry for only two months or so between two calvings. The milking period depends chiefly on the nature of feeding and of breed. The highest average yield of milk from a <i>Desi</i> cow is not more than four or five seers, and the lowest about a seer per diem; while the <i>Kosi</i> cows give as much as seven or eight seers.</p> <p><i>Artificial means of exciting the desire of cows for the bull.</i>—Should the cows fail to come in heat in the usual course of time, the following means are adopted to excite them:—</p> <p>(1) <i>Jadr</i> fodder (if available) and two to four pounds of boiled cotton seed are given until the desired effect is produced, which, it is said, takes place within a period not exceeding three weeks after this method of feeding has begun. Should the <i>jadr</i> fodder not be available, the cotton seed alone is given.</p> <p>(2) Pigeon dung, <i>bhelawan</i> (<i>Semecarpus Anacardium</i>) and wasp comb are also given in small quantities internally with wheat meal.</p>	<p>Milking quality of cows.</p>
<p><i>Characteristics of a good Milker.</i></p> <p>The following points are said to denote good milking qualities:—</p> <p>(1) Udder large with teats well set apart, the front teats being larger than the hind ones, and milk veins well developed.</p> <p>(2) Both skin and hair generally all over the animal should be smooth and thin.</p> <p>(3) Temper docile. Spirited cows possessing a fiery temper are seldom good milkers.</p> <p>(4) The hind quarters heavier than the fore quarters, and the belly large.</p>	

## OXEN.

## Breeds of Cattle

(5) The animal should be a good eater; as it is the food which ultimately produces milk.

## Feeding.

Cattle-food  
for cows.

(a) *Cows*.—Generally no special care is taken of the cows in calf. They seldom get any food or fodder at home, but are made to depend on what they can pick up outside along with the village herd. Even good water is not supplied to them with any great care or regularity, and most of them are thus compelled to drink the water of natural pools and tanks, however dirty it may be. While milking, they receive about ten seers of *bhusa* (wheat or barley straw reduced to fine pieces by the trampling of bullocks); or failing it, as much *kutia* (*juar* straw cut into small bits) as they can eat. With either of these are given dried leaves and chopped twigs of wild plums (*gharberi*) in varying quantities, when available. Besides these things, they get from half a pound to two pounds of mustard cake, and from one to three pounds of cotton seed. The quantity of *bhusa* is reduced to four seers in case of those that are grazed during the day, and the concentrated dry food is also reduced. The cake is first dissolved in water and then given mixed with *bhusa* or *kutia*. This preparation is called *sani*. Cotton seed is given after it has been well steeped in water, or boiled, the latter being considered more easily digestible and assimilable. Boiled seed is however given only in winter, being replaced in summer by an extra quantity of cake. The stall-fed cows (and these are very few) receive the *sani* two or three times a day, while those that graze outside, get it only once in the evening. The cows are all tied either under a thatch or inside the owner's dwelling, from July to February, with a view to protecting them from rain and cold.

Those, however, who have either a special interest in cattle or whose circumstances permit, give them at night, when they are in calf, about a basketful of *bhusa* or *kutia*, or dried wild plum leaves locally called *pala*, and about a pound of mustard cake in the shape of *sani*. A few days before delivery, cows are given (mostly around Kosi and in the Tahsil of Math) about 1½ lb of boiled barley mixed with ¼ lb *gur*, ½ lb of mustard oil and one ounce of common salt. This mixture is intended to prevent the weakness likely to be caused by delivery, and to have a beneficial effect upon the flow of milk. Liquid food is carefully avoided for four or five days after delivery, and the cow is chiefly kept on wheat straw or wheat bran with *gur*, ginger and oil. For a month after *kila* (the period during which colostrum or *peaso* is yielded by the cow) she receives from 2 to 3 lb of boiled wheat mixed with ½ to 1 lb of *gur* and the milk left by the calf, which is drawn. This mixture is supposed to increase the yield of milk considerably. Besides, the following are also given to cows in some cases with a view to increasing the quantity and quality of milk :—

(1) Two to two and a half seers of boiled *urd* (*Phaseolus radiatus*), and two pounds of crushed *juar* (*Sorghum vulgare*), made into gruel with about ten pounds of *matha*, (churned curd).

(2) Husked *chana dal*, (gram, *Cicer arietinum*) well steeped in water.

(3) *Guar* (cluster beans, *Cyamopsis psoraloides*), or *juar* fodder cut green before the formation of seed.

(4) Grazing at about 2 A.M. (*passar charana*), when there is dew on grass.

(5) Dried leaves or green twigs of wild plums (*pala*), chopped into small bits, are said to increase the quantity of milk and the percentage of butter therein. They also impart an agreeable flavour to the milk.

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<p>(b) <i>Working Bullocks</i>.—These receive <i>kutia</i> or <i>bhusa</i>, <i>ad libitum</i>, or dried leaves or chopped twigs of wild plums. Cake is also given in quantities varying from 1 to 2 lb in the shape of <i>sani</i>. Those that can afford, give also green <i>juar</i> in addition to green grass during the rainy season. During the winter, green <i>varson</i> (<i>Brassica campestris</i>) after it has borne pods, and green <i>rabi</i> weeds are also given. Like cows, the bullocks are kept in houses during wet and cold seasons.</p>	Cattle-food for working bullocks.
<p>(c) <i>Calves</i>.—Generally, the calves are not allowed to suck up as much milk as they require. This is almost invariably the case when, after two months or so, they have become able either to graze or eat a few blades of grass. They are seldom given any special food. Many do not send out calves along with mothers for grazing as long as cows are in milk, while some, who rear a large stock, have a special man employed to take them out for grazing separately from the cows.</p> <p>Generally speaking, the calf is kept almost entirely on the mother's milk for 1½ to 2 months—not more than half of the yield being allowed to it during this period. Then, some bread and <i>matha</i> (churned curd) are given, and the allowance of mother's milk is gradually reduced until the calf learns to live on grass chiefly. Among milk dealers, the calf is given still less milk while young.</p>	Food for calves.
<p>(d) <i>Bulls</i>.—There is no system of feeding the breeding bulls, as they are never tied but keep wandering about villages, and it is very difficult to catch them. They graze on pastures mostly, but they often get into cultivators' fields, and eat the standing crops until they are turned out. At Gobardhan, I saw people arresting and tying up the village bulls in the harvesting season in order to save the gathered crops from their attack. This is looked upon by the people as a violation of religious rules. In several places I found the bulls so furious that it was impossible to take their measurements.</p>	Food for bulls.
<p><i>Barren Heifers.</i></p>	
<p>People are of opinion that nothing can be done to make such animals fertile.</p>	
<p><i>Determination of the Age of the Cattle.</i></p>	
<p>In determining the age of bulls and bullocks it is customary to make reference to the incisor teeth, which are eight in number and are all placed in the lower jaw. Up to the age of two years and a half these are milk teeth; between two years and a half to three years, the first pair (middle pair) falls off and is replaced by two permanent teeth; between three and three years and a half or at the utmost four years, the second pair is similarly replaced. In the beginning of the fifth year, the third pair falls off and its place is taken by a permanent pair. The fourth pair is replaced similarly towards the end of the fifth year, when all the permanent teeth are complete. At this stage the animal is said to be <i>milahua</i> (uniform) and is considered to be full grown. After this there is nothing definite to assist in the determination of the age with certainty; but, as the animal advances, the teeth undergo wearing, and the age is estimated according to the degree of wearing. It must be stated that some animals get all their permanent teeth by the end of the third or the fourth year. Such animals are called <i>bharaklatia</i>. But it being regarded by the Hindus as objectionable to examine the teeth of a cow, the age is mainly determined by her general appearance and the number of rings round the horn, each ring being taken to denote one calving. Bullocks are broken in the plough when three years of age, but are not often put to regular work until they are four.</p>	Determination of age.

OXEN.	Breeds of Cattle
Castration.	<p data-bbox="606 376 773 401"><i>Castration of Calves.</i></p> <p data-bbox="404 409 978 583">Castration of animals is prohibited by religion among the Hindus. The operation is therefore left in the hands of butchers. The animals are castrated at any age and in any season when the butchers happen to purchase them. It is, however, considered better to castrate animals during the winter, the season most favourable for healing up of wounds. Only the castrated animals are used as draught cattle, and therefore each Hindu breeder, being compelled by religion not to castrate his calves, sells them invariably to a Muhammadan butcher or cattle dealer, who, in his turn, castrates and sells them in the market.</p> <p data-bbox="404 583 978 698">Though early castration is perfect and less painful, it is, nevertheless, considered undesirable from an agricultural point of view; for the animal loses all spirit and courage, and acquires a sort of feminine appearance, while its neck becomes thin. Such castration, on the other hand, is very much preferred by butchers, as it favours early and large accumulation of flesh and fat at a comparatively small expense.</p> <p data-bbox="404 698 978 806">Castration at an advanced age is sometimes imperfect. Calves castrated at the age of about two years, neither lose their spirit nor exhibit a feminine appearance; they also become docile and lay on flesh. In short, castration at this age is considered to make the animal well suited for agricultural requirements. The following methods of castration are adopted in the district:—</p> <ol data-bbox="404 806 978 1012" style="list-style-type: none"> <li data-bbox="404 806 978 863">(1) The spermatic cord is crushed with a piece of bamboo or a wooden hammer, and the animal left to himself. It gets all right in about a fortnight. This process sometimes causes incomplete castration.</li> <li data-bbox="404 863 978 921">(2) Opening of scrotum and the entire removal of testicles with a knife. This, though complete, is rarely adopted, as it is considered more painful than the one described above.</li> <li data-bbox="404 921 978 1012">(3) It is said that some people apply a quantity of salt to the testicles of calves when they are very young. The mothers lick them generally while suckling them, and they lick the testicles all the more because of the salt. Repetition of this, for a number of days, is said to make the testicles lose their genital functions.</li> </ol>
Causes of degeneration	<p data-bbox="489 1037 909 1062"><i>Causes of Degeneration of the Cattle in this District.</i></p> <p data-bbox="404 1078 978 1177">Several causes have been at work in this district, from time immemorial, the combined result of which has led to the degeneration of cattle. Most of these causes are solely to be attributed to the utter negligence, carelessness and want of interest on the part of the people. Among the most common causes are the following:—</p> <ol data-bbox="404 1177 978 1326" style="list-style-type: none"> <li data-bbox="404 1177 978 1326">(1) <i>Gradual deterioration of natural pastures and non-cultivation of fodder crops throughout a great part of the district.</i>—There are large pasture areas in certain parts on the banks of the river Jamna. They are overflowed during the rainy season, and are capable of producing only rank and coarse grasses, which are poor in respect of nutrition, and thus during the rainy season, though there may be enough grass for cattle to eat, it only fills up the stomach without supplying the proper quantity of nutritious matter.</li> </ol> <p data-bbox="404 1326 978 1424">Moreover this coarse herbage does not last long, for the soil, being of a sandy nature (<i>bhur</i>), parts with its surface moisture soon after the periodical rains are over, and gets heated to such an extent during the day, that very few plants can possibly live for any great length of time. The cattle thus get very little to live upon during the hot months of</p>

in the Mathura District (S. M. Hadi)	OXEN.
<p>summer, and that only by wandering over extensive areas. The result is that the cattle in all such localities are generally far from being what may be called well-built animals.</p>	<p>Degeneration of cattle.</p>
<p>(2) <i>Bad management of pastures.</i>—So far as manuring is concerned, pastures receive nothing except what they get in the shape of occasional droppings of animals grazing on them. The greater portion of these droppings, too, is picked off to be used as fuel.</p>	<p>Want of fodder.</p>
<p>Again, the pastures, as a rule, are never tilled. Consequently, the soil gets consolidated by the effect of rain and constant pressure caused by the trampling of animals. The air thus does not freely enter into the soil, and gives rise to many a circumstance unfavourable for successful growth of grass.</p>	
<p>Though the direct result of all this is only to lessen the growth of fine grasses of a superior kind, yet, indirectly, they lead to slow but certain deterioration of animals.</p>	
<p>(3) <i>Bad management of live-stock on the part of the people.</i>—As has been stated elsewhere, the animals generally get nothing at home in the shape of food or fodder, but are made to depend upon what little they can pick up in the so-called pastures of the district. Except those whose owners are either naturally interested in cattle, or those who are milk dealers, there are very few who take the trouble of cultivating any nourishing fodder crop for feeding while green. Cows, when in calf, do not receive any special treatment, therefore the blood not being rich enough to supply the required amount of materials for the proper development of the foetus, it is not unfrequently that calves are constitutionally weak from their very birth. Again, in most cases, the calves neither get the required amount of milk, nor any other food which should contribute towards the formation of bones and muscles, etc. This is another very great check on their development.</p>	<p>Neglect of animals.</p>
<p>(4) <i>Want of proper system of breeding.</i>—As a rule, no care is taken in selecting good animals to breed from. Any bull that can be readily had when a cow is in heat, is allowed to serve her without any consideration of the breed he belongs to, the defects or good qualities he possesses, his age, size, strength, etc. Thus, it very often happens that large superior cows are covered by tiny bulls of very inferior quality, grown-up cows by young immature bulls, young cows by old, almost used-up bulls; and healthy cows by unhealthy bulls, suffering from some hereditary disease.</p>	<p>Defective breeding.</p>
<p>Thus, the calves produced are naturally not so healthy and strong, as is desirable; for, under the influence of the natural law of inheritance all the qualities, whether good or bad, of the parents are transmitted to them in a greater or less degree. It may be, that one of the parents, being stronger than the other, the defects of the latter do not become perceptible in the calf until exposed to circumstances favourable for their development. The present degeneration of cattle in the Mathura Districts is, to a great extent, attributable to this indiscriminate system of breeding which prevails almost throughout the district.</p>	
<p><i>General Remarks.</i></p>	
<p>There is no doubt regarding the suitability of the District, specially the Kosi, Chhata, Mahaban and Mathura Tahsils, for the purposes of cattle breeding. The Kosi animals are already superior, both as draught and as milking cattle, to most of the breeds found in the Eastern Districts of the United Provinces; and, in my opinion, preference should be given to the introducing of this breed into the Eastern Districts, where the cattle are poorest, over the more expensive breeds of Nagaur and Hariana for which the climate of the Eastern tracts is not equally</p>	<p>Suitability of the District for cattle breeding.</p>

OXEN.	Breeds of Cattle in the Mathura District.
Suggestions for improvement.	<p>suitable. At Benares, Jaunpur, Fyzabad, or Cawnpur for instance, where cows are usually small, a <i>Kosi</i> bull would, I think, be a better animal to breed from than a <i>Hariana</i> or a <i>Nagaur</i> bull; and, I believe, it would be a very proper step towards improvement in cattle breeding to provide the Eastern Districts with a few <i>Kosi</i> bulls, instead of bulls of any other western breed.</p> <p>There is, however, great need for improvement in Mathura itself, and the following are a few practical suggestions, which may be carried out with a view to effecting such improvement :—</p> <p>(1) To begin with, one bull of genuine <i>Hissar</i> or <i>Mewat</i> breed should be provided to each Tahsil, except <i>Kosi</i>, which is specially suited for breeding, and where two such bulls might be kept with advantage. These should be fed properly and kept in some central locality where cow-owners may be induced to bring their cows to be served.</p> <p>The District Board may be persuaded to buy a few of these bulls from its own funds, if possible, and locate them at proper places.</p> <p>The Municipal Board of Mathura may, similarly, buy one or more good <i>Hariana</i> or genuine <i>Mewat</i> bulls, and keep them at the Sadr.</p> <p>(2) Some Zamindars of the Sadabad and Mathura Tahsils, where cows are small, might be induced to buy two or three <i>Kanwaria</i> bulls from Bundelkhand. It would be very interesting to see the results of cross breeding with these bulls.</p> <p>(3) The pastures should be manured occasionally with dung. Even ground <i>kunkar</i>, if spread or ploughed in at the rate of 2 to 3 maunds per acre once in 4 or 5 years, would be likely to prove beneficial. It is desirable to have crushed bones applied to the pastures once in 15 or 20 years; but, in a Hindu district like Mathura, such a thing would be an impossibility.</p> <p>(4) The cultivation of <i>Dub</i> grass (<i>Cynodon Dactylon</i>) and of other grasses, known to the people to be nutritious, should be extended on natural pastures.</p> <p>(5) Guinea grass may be brought to the notice of cultivators, and they may be told to grow it on such patches of land as they can spare. I think the Canal officials might raise it along the <i>rajbahas</i>, and sell the crop to cattle owners and to mutual advantage.</p> <p>(6) The cultivation of <i>chari</i>, <i>sarsón</i>, oats and carrots should be extended, and that of such fodder crops as <i>juár</i> (<i>sorghum vulgare</i>), Reana and Mangel Wurzel should be introduced. The Zamindars should of course be the first to start the cultivation of new fodder crops.</p> <p>(7) Special prizes should be given at the Bindrahan Fair to persons exhibiting good specimens of cows and calves bred in the District.</p>

O. 551—594.

G. I. C. P. O.—No. 231 R. &amp; A.—15-11-95.—2,1000.—H. R.

All communications regarding THE AGRICULTURAL LEDGER should be addressed to the Editor, Dr. George Watt, Reporter on Economic Products to the Government of India, Calcutta.

The objects of this publication (as already stated) are to gradually develop and perfect our knowledge of Indian Agricultural and Economic questions. Contributions or corrections and additions will therefore be most welcome.

In order to preserve a necessary relation to the various Departments of Government, contributions will be classified and numbered under certain series. Thus, for example, papers on Veterinary subjects will be registered under the Veterinary Series ; those on Forestry in the Forest Series. Papers of more direct agricultural or industrial interest will be grouped according as the products dealt with belong to the Vegetable or Animal Kingdom. In a like manner, contributions on Mineral and Metallic subjects will be registered under the Mineral Series.

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